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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,172	09/06/2000	Yung-Hui Chen	06720.0061	8931
22852	7590	12/30/2005	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			NGUYEN, THUAN T	
			ART UNIT	PAPER NUMBER
			2685	

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/656,172	CHEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	THUAN T. NGUYEN	2685	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-31 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/6/00 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-15, and 18-31 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

3. Claims 1-15, and 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brady et al. (U.S. Patent No. 6,442,374 B1) in view of Adar (US Patent 5,774,017, which was already cited in PTO-892 in the previous office action).

Regarding claim 1, Brady discloses "an upconverter for modulating an input signal to provide an output signal having a higher frequency than said input signal than the input signal, comprising: a mixer; and an amplifier coupled to the mixer, including a plurality of transistors and having a first input terminal for receiving the input signal and a second input terminal for receiving a DC power control signal of a predetermined level, wherein the DC power control signal turns off the transistors of the amplifier when the predetermined level is between approximately -1 to -2 volts" (Fig. 3 for an upconverter receiver as RF inputs and IF outputs, with a mixer 310 and an amplifier 306, the first RF input at 302, the second input for LO controlling power input for voltage regulating at a predetermined level, preset by a user, between

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approximately  $-1\text{V}$  to  $-2\text{V}$ , refer to col. 7/line 52 to col. 8/line 6, the predetermined threshold for active from inactive is preset by the user to becomes at or near zero).

Applicants argue that the amplifier of Brady does not have a second input terminal for receiving a DC power control signal (as illustrated in Fig. 8 of the present application); however, Adar teaches an exact same technique for having the amplifier of receiving RF input and also DC power control signal from a power control circuit 184 (refer to Adar, Fig. 4, and col. 8/line 53 to col. 9/line 35 for controlling and providing appropriate power control signals to the amplifier 152 using DC power source Vdd). Therefore, it would have been obvious to one of ordinary skill in the art to modify Brady's system with Adar's teaching technique of controlling DC power signals for the amplifier in order to provide appropriate DC power control signals at a predetermined level at appropriate times.

As for claim 2, Brady suggests "comprising a source degenerating inductor circuit including a first inductor in parallel with a second inductor and a third inductor, wherein the first inductor has a higher inductance than each of the second inductor and the third inductor" (Fig. 2, and col. 7/lines 24-64 for the source degenerating circuit as Zener diodes work as inductor roles).

As for claim 3, Brady further "comprising a DC bias network for biasing the mixer and reducing power-up latency in the upconverter including a voltage dividing network coupled to the second input terminal of the amplifier" (DC bias 246, refer to col. 7/lines 10-23; and Fig. 4, col. 8/line 61 to col. 9/line 7 for voltage divider).

As for claim 4, Brady suggests "wherein the DC bias network comprises a first resistor, a second resistor, a third resistor, and a fourth resistor, the first resistor and third resistor receiving

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a differential local oscillator signal and the first resistor being in parallel with each of the second resistor, the third resistor, and the fourth resistor” (Fig. 4 for DC bias network).

As for claim 5, Brady shows “further comprising a plurality of serially connected diodes coupled to the first input terminal of the amplifier for electro-static discharge protection” (Fig. 2 with diodes connected).

Regarding claim 6, Brady further shows “wherein the plurality of serially connected diodes comprises a plurality of diode-connected transistors” (col. 7/lines 24-42).

Regarding claims 7-12, these claims for “an upconverter for modulating an input signal to provide an output signal having a higher frequency than the input signal, comprising: a mixer; and an amplifier, coupled to the mixer, including matched first and second MESFETS, each MESFET having source, gate, and drain terminals, wherein the gate of the first MESFET receives the input signal, and the gate of the second MESFET is coupled to a DC control voltage capable of turning off the first and second MESFETS” are rejected for the reasons given in the scope of claims 1-6 with Figures 1-4 as discussed above in view of Brady and Adar.

As for claims 13-15, and 18-31, these claims for “an upconverter for modulating an input signal to provide an output signal having a higher frequency” with known components within IC circuits as diodes, capacitors, inductors, transistors each having source, gate and drain terminals are rejected for the reasons given in the scope of claims 1-6 as indicated above, not limited to the cited paragraphs but also to the entire references of Brady and Adar.

***Allowable Subject Matter***

4. Claims 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record does not teach or suggest an upconverter as cited in claim 13 AND including the step of “wherein the amplifier comprises matched first and second MESFETS, each MESFET having source, gate, and drain terminals, wherein the gate of the first MESFET receives the input signal and is coupled to one end of the filter, and the gate of the second MESFET is coupled to ground and a second end of the filter” and “wherein the mixer comprises matched third and fourth MESFETS, each having source, gate and drain terminals, and matched fifth and sixth MESFETS, each having source, gate and drain terminals, wherein the sources of the third and fourth MESFETS are coupled to the drain of the first MESFET and the sources of the fifth and sixth MESFETS are coupled to the drain of the second MESFET, the gate of the third MESFET is coupled to the gate of the sixth MESFET and the gate of the fourth MESFET is coupled to the gate of the fifth MESFET, the gates of the third and fourth MESFETS receive a differential local oscillator signal, the drain of the third MESFET is coupled to the drain of the fifth MESFET and the drain of the fourth MESFET is coupled to the drain of the sixth MESFET, and the drains of the third and fourth MESFETS providing an IF output signal” as claimed.

***Conclusion***


6. **Any response to this action should be mailed to:**  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to the New Central Fax number:**  
(571) 273-8300, (for Technology Center 2600 only)

Hand deliveries must be made to Customer Service Window,  
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Thuan Nguyen whose telephone number is (571) 272-7895. The examiner can normally be reached on Monday-Friday from 9:30 AM to 7:00 PM, with alternate Fridays off.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**TONY T. NGUYEN  
PATENT EXAMINER**

Tony T. Nguyen  
Art Unit 2685  
December 23, 2005